PALEONTOLOGY.—*Taxonomic notes on genera of fossil and Recent Bryozoa.*

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Since the publication of an article *Generic descriptions of Upper Paleozoic Bryozoa* in this Journal in 1941,[2] the writer has had occasion to check the nomenclature of this phylum in some detail while bringing his working generic catalogue up to date and rearranging the bryozoan study collection in the U. S. National Museum. As a result, a number of new genera as well as other necessary changes came to light, some of which had been recognized as long ago as 1900 when the late John M. Nickles and the writer published their *Synopsis of American fossil Bryozoa*.[3] As these new genera are concerned in the preparation of the bryozoan chapter for the *Treatise on invertebrate paleontology*, which will not include descriptions of new genera and species, it is necessary to validate their names in advance. The following changes in taxonomy include a number of new names proposed in honor of bryozoan specialists who have contributed much to the science. As the complete citations to the described type species are given in several of the standard bibliographic works on Bryozoa, only the page, plate, and figure are quoted herewith.

Order Ctenostomata Busk, 1852

Family Vinellidae Ulrich and Bassler, 1904

Condranema, n. name to replace *Heteronema* Ulrich and Bassler, 1904, not Dujardin, 1841. Type species: *Heteronema capillare* Ulrich and Bassler, 1904, p. 278, pl. 65, fig. 11. Silurian of Gotland.

Marcusodictyon, n. gen. Like *Condranema*, but the threads (stolons) unite to form usually 6-sided polygons. Type species: *Heteronema priscum* Bassler, 1911, p. 58, figs. 6a–d. Lowest Ordovician; Esthonia.

Family Ascodictyonidae Ulrich, 1890

Eliasopora, n. gen. Like *Ascodictyon*, but vesicles are oval and radiately arranged in clusters, which are connected at intervals by stolons. Type species: *Ascodictyon stellatum* Nicholson and Etheridge, 1877, p. 464, pl. 19, figs. 1–6 Middle Devonian; western New York.

Order Cyclostomata Busk, 1852

Family Diastoporidae Gregory, 1899

Flabellotrypa, n. gen. Like *Sagenella*, but zooecia open only along outer edge of the incrusting flabelliform zoarium. More or less circular attached disks about 3.5 mm wide, of parallel, contiguous, transversely striated tubes. Type species: *F. rugulosa*, n. sp. Helderbergian (Linden); near Chaseville, Benton County, western Tennessee, Holotype: U.S.N.M. no. 116416. [Fig. 1, × 10.]

Mitoclemella, n. gen. Like *Mitoclema*, but apertures project upward in rapidly ascending spirals. Type species: *Mitoclema mundulum* Ulrich, 1890, p. 177, figs. 4a, b, c, Trentonian (Nematopora bed); Cannon Falls, Minn. Cotypes: U.S.N.M. no. 43297.

Osburnostylus, n. gen. Like *Mitoclema*, but zoarium of minute, jointed segments. Type species: *O. articulatus*, n. sp. Individual segments about 4 mm long with usually six parallel encircling rows of apertures and both ends pointed for attachment. Ordovician-Blackriveran (Benbolt); near Rye Cove, Va. Holotype: U.S.N.M. no. 116418 (Fig. 2a), paratype (Fig. 2b).

Voigtopora, n. gen. Like *Stomatopora*, but the individual zooecia are broad, elliptical, slightly constricted at their base, and marked by parallel transverse lines. Type species: *Alecto calypso* d'Orbigny, 1852, p. 844, pl. 630, figs. 5–8. Cretaceous (Senonian) of France.

Semiceidae, n. name

Semiceidae, n. name (based on *Semicea* d'Orbigny 1854). Proposed to replace Ceidae d'Orbigny, 1852, which was named after *Cea* d'Orbigny, 1854, preoccupied by Walker, 1837. Family of Cretaceous cyclostomatous Bryozoa.

Family Fistuliporidae Ulrich, 1882

Duncanoclema, n. gen. Solid twiglike fragments with internal structure of *Fistulipora* except that the lunaria are pierced by 6–8 hollow tubes or pores similar to those in *Anolotichia* of the Ceramoporidae. Type species: *Fistuliporella marylandica* Ulrich and Bassler, 1913, p. 266, pl. 45, figs. 8–11. Silurian (Keyser); western Maryland.

Xenotrypa, n. gen. A small solid dome-shaped mass of rounded untabulated zooecia with indistinctly developed lunaria, separated by typical vesicular interzooecial spaces traversed by large, thick, dense, granulose acanthopore-like tubes. Type species: *Fistulipora primaeva*

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[2] Bassler, R. S., Journ. Washington Acad. Sci. **31** (5): 173–179, figs. 1–24. 1941.

[3] Nickles, J. M., and Bassler, R. S., U. S Geol. Surv. Bull. 173: 1–663. 1900.

Bassler, 1911, p 109, text fig. 40. Ordovician (Glauconite ls.); Government of St. Petersburg, Russia.

Hexagonellidae, n. fam.

Hexagonellidae, n. fam. Proposed for the reception of Hexagonellinae Crockford, 1947, subfamily of Fistuliporidae Ulrich, 1882. Ten genera with the special characters of the subfamily are already known, so that its elevation to family rank seems not unreasonable.

Order TREPOSTOMATA Ulrich, 1882

Family Monticuliporidae Nicholson, 1881

Prasoporina, n. gen. Like *Prasopora,* but cystiphragms isolated, semiglobular structures connected with opposite wall by a few diaphragms. Type species: *Prasopora* (*Monticulipora*) *selwynii* Nicholson, 1881, p. 206, fig. 44; Ulrich 1893, p. 250, pl. 16, figs. 16, 17.

Family Batostomellidae Ulrich, 1890

Canutrypa, n. gen. Ramose, with thick polygonal amalgamated zooecial walls in mature zone separated by a row of tabulated mesopores and lined in most cases by large, sometimes spherical, cystiphragms suggesting ovicells. Type species: *C. francqana,* n. sp. Upper Devonian; Ferques, France. Holotype: U.S.N.M. no. 116417. [Figs. 3, 4, tangential and vertical thin sections.]

Family Stenoporidae Duncan, 1939

Lioporidra, n. name for *Liopora* Girty, 1915, not Nicholson and Etheridge, 1878. Thin layers of zooecia with numerous mesopores, no diaphragms but spinelike projections from the walls. Type species: *Liopora subnodosa* Girty, 1915, p. 341, pl. 38, figs. 2, 2a. Pennsylvanian (Oread ls.); Missouri.

Stenophragmidium, n. name for *Stenophragma* Munro, 1912, not Skuse, 1890. Like *Stenopora,* with monilae and acanthopores but semidiaphragms project from only one side of walls. Type species: *Stenophragma lobatum* Munro, 1912. Carboniferous of England.

Family Halloporidae Bassler, 1914

Panderpora, n. gen. Zoarium hemispheric with zooecia bearing distantly spaced, curved diaphragms and separated by small, closely tabulated mesopores. Type species: *Hallopora dybowskii* Bassler, 1911, p. 335, pl. 5, figs. 1–1e; text figs. 211, 212.

Family Constellariidae Ulrich, 1890

Hennigopora, n. gen. Like *Nicholsonella* but has clean cut acanthopores indenting the apertures and mesopores occupied by block like tabulae. Type species: *Callopora florida* Hall, 1852, p. 146, pl. 40, figs. 2a–f; Bassler, 1906, p. 38, pl. 14, figs. 10, 11. Clintonian; western New York.

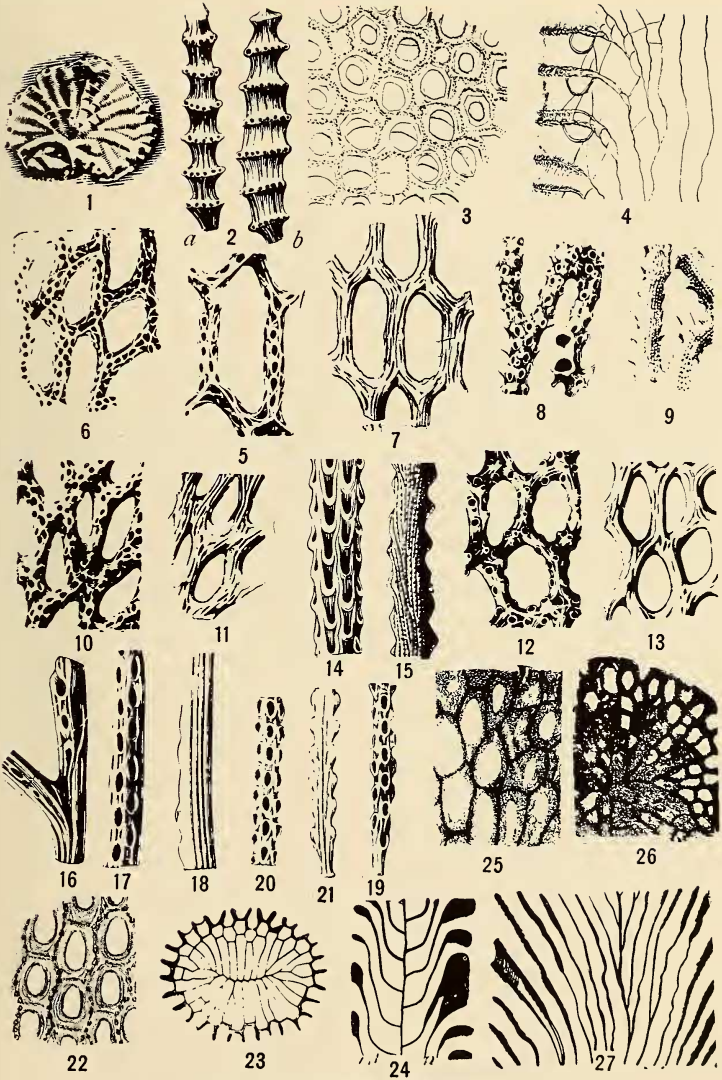
Revalotrypa, n. gen. Like *Nicholsonella,* but diaphragms practically absent in both zooecia and mesopores. Granular wall structure as in *Dianulites.* Type species: *Nicholsonella gibbosa* Bassler, 1911, p. 224, fig. 126, pl. 11, figs. 1–6. Ordovician of Esthonia.

Family Phylloporinidae Ulrich, 1890

Carinophylloporina, n. gen. Like *Phylloporina,* but fenestrules angular, hexagonal, with a sharp carina dividing six parallel rows of apertures into two sets on the frontal as in *Septopora;* dorsal side longitudinally striated. Type species: *C. typica,* n. sp. The carina with three or four rows of closely spaced zooecia on each side almost vertically arranged is characteristic of the species. Blackriveran (Edinburg); ¼ mile east of Strasburg Junction, Va. Holotype: U.S.N.M. no. 116410 (Fig. 5) and paratypes (Figs. 6, 7).

Oeciophylloporina, n. gen. Like *Subretepora,* but branches divide and join again at considerable intervals forming very elongate fenestrules; ovicell-like structures, about width of branches, develop on frontal; dorsal bears longitudinal, granular striae. Species further characterized by well-separated, elevated circular peristomes and prominent acanthoporelike intervening nodes. Type species: *O. typicalis,* n. sp. Blackriveran (Edinburg); ¼ mile east of Strasburg Junction, Va. Holotype: U.S.N.M. no. 116414 (Fig. 8) and paratype (Fig. 9).

Figs. 1–27.—1, *Flabellotrypa rugulosa,* n. gen. and sp., incrusting zoarium, × 10; 2, *Osburnostylus articulatus,* n. gen. and sp., segments with ends for articulation, × 10; 3, 4, *Canutrypa francqana,* n. gen. and sp., tangential and vertical thin sections, × 20; 5–7, *Carinophylloporina typica,* n. gen. and sp., frontal (5) × 10, (6) × 6, and striated dorsal (7), × 10; 8, 9, *Oeciophylloporina typicalis,* n. gen. and sp., frontal and dorsal, × 15; 10, 11, *Trepostomina crassa,* n. gen. and sp., frontal and dorsal sides, × 8; 12, 13, *Moorephylloporina typica,* n. gen. and sp., frontal and dorsal sides, × 15; 14, 15, *Hemulrichostylus lineatus,* n. gen. and sp., frontal and dorsal sides, × 20; 16–18, *Heminematopora virginiana,* n. gen. and sp., basal, frontal, and dorsal, × 20; 19–21, *Arthrostyloecia nitida,* n. gen. and sp., frontal (19, 20) and dorsal (21), × 15; 22–24, *Ottoseetaxis bipartitus,* n. gen. and sp., tangential (22), transverse (23), and vertical (24) thin sections, × 20; 25–27, *Nemataxidra piercensis,* n. gen. and sp., tangential (25), transverse (26), and vertical (27) thin sections, × 25.



FIGS. 1–27.—(See opposite page for legend).

Trepostomina, n. gen. Zoarium of elongate reticulate fenestrules with three to five rows of angular, thick-walled zooecia on the frontal; dorsal coarsely striated. Type species: *T. crassa*, n. sp. Trepostomelike apertures alone form the frontal. Blackriveran (Edinburg); ¼ mile of Strasburg Junction, Va. Holotype: U. S. N. M. no. 116413 (Fig. 10) and paratype (Fig. 11).

Moorephylloporina, n. gen. Like *Phylloporina* but fenestrules small, polygonal; frontal with two parallel rows of circular well-spaced apertures separated by a delicate thread or carina bearing elevated nodes (acanthopores) at regular intervals as in *Fenestella*. Dorsal side lines longitudinally with delicate striae. Type species: *M. typica* new speceis. The median dorsal carina with conspicuous nodes characterize the species. Blackriveran (Edinburg); ¼ mile east of Strasburg Junction, Va. Holotype: U.S.N.M. no. 116413 (Fig. 12), paratype (Fig. 13).

Sardesonina, n. gen. Broad, closely reticulated branches of four to six rows of apertures traversed longitudinally by strong wavy carinae. Internal structure showing zooecial tubes with diaphragms, mesopores and acanthopores. Type species: *Phylloporina corticosa* Ulrich, 1893 (1886) p. 212, pl. 5, figs. 1–10. Blackriveran of southeastern Minnesota.

Order CRYPTOSTOMATA Vine, 1883

Family Arthrostylidae Ulrich, 1883

Ulrichostylus, n. gen. Narrow, cylindrical stems bearing eight or more longitudinally arranged zooecial rows. Base articulated, circular sockets on sides for new branches. Type species: *Helopora divaricatus* Ulrich (1886) 1893, p. 191, pl. 3, figs. 1–3. Blackriveran; southeastern Minnesota.

Glauconomella, n. name (*Glauconome* authors, non Goldfuss, 1829, Petr. Germ., p. 100, pl. 36, figs. 5–8, based on unrecognizable *Vincularias* from the Tertiary of Germany). Zoarium branching continuously into short, free, lateral stipes, with noncelluliferous back and no basal articulation. Type species: *Glauconome disticha* Goldfuss, 1931, Petr. Germ., p. 217, pl. 64, fig. 15a, b. Wenlockian of England. (Selected as genotype of *Glauconome* but unavailable since not in the 1829 section of Petr. Germ.)

Hemulrichostylus, n. gen. Like *Ulrichostylus* but jointed at base only and one of the sides with dorsal striations. Type species: *H. lineatus*, n. sp. The noncelluliferous broad dorsal side is the distinguishing character for the species. Blackriveran (Edinburg); ¼ mile east of Strasburg Junction, Va. Holotype: U.S.N.M. no. 116412 (Fig. 14) and paratype (Fig. 15).

Heminematopora, n. gen. Like *Nematopora*, but one of the four sides without apertures and longitudinally striated. Type species: *H. virginiana*, n. sp. The delicate dichotomously branched zoarium with basal articulation only and one side longitudinally striated is easily recognized. Blackriveran (Edinburg); ¼ mile east of Strasburg Junction, Va. Holotype: U.S.N.M. no. 116411 (Fig. 16), paratypes (Figs. 17, 18).

Arthrostyloecia, n. gen. Delicate articulated segments like *Arthrostylus*, but apertures have distinct oval peristomes which often enlarge into cup-shaped ovicell-like structures. Type species: *A. nitida*, n. sp. Blackriveran (Edinburg); ¼ mile east of Strasburg Junction, Va. Holotype: U.S.N.M. no. 116409 (Fig. 19), paratypes (Fig. 20, 21).

Family Rhabdomesontidae Vine, 1883

Goldfussitrypa, n. gen. Like *Rhombopora* in general structure but narrow branches of thick walled polygonal zooecia surrounded by rows of micracanthropores; diaphragms in immature region; no hemisepta. Type species: *Rhombopora esthonia* Bassler, 1911, p. 163, fig. 82, Middle Ordovician; Esthonia.

Linotaxis, n. gen. *Rhombopora* with zooecia arising gently from a central linear axis and a large megacanthopore at head of each aperture. Type species: *Orthopora? magna* McNair, 1942, p. 347, pl. 47, figs. 6, 10–12, Upper Devonian (Chemung); Rockville, N. Y.

Ottoseetaxis, n. gen. Narrow bifoliate smooth branches with wide immature zone followed by narrow mature one with each zooecium surrounded by a single row of micracanthopores but with neither hemisepta, diaphragms, nor mesopores developed. The bifoliate area is restricted to the immature zone. Type species: *O. bipartitus*, n. sp. Blackriveran (Benbolt); Knoxville, Tenn. (Figs. 22–24). Holotype: U.S.N.M. no. 116419.

Nemataxidra, n. gen. Like *Nemataxis* in internal structure except that diaphragms and superior and inferior hemisepta are wanting. Type species: *N. piercensis*, n. sp. Narrow smooth branches several millimeters in diameter with laminated structure reduced to a minimum and tubes arising in a central line. Blackriveran (Pierce); Murfreesboro, Tenn. Holotype: U.S.N.M. no. 117971 (Figs. 25–27).

Nicklesopora, n. gen. *Rhombopora* with a single row of micracanthopores around each zooecium. No diaphragms, hemisepta, mesopores, or central axis. Type species: *Rhombopora elegantula* Ulrich, 1884, p. 33, pl. 1, figs. 3–3b. Mississippian (New Providence); Kings Mountain, Ky.

Saffordotaxis, n. gen. Like *Nicklesopora*, but one or two rows of megacanthopores surround each zooecium. Type species: *Rhombopora incrassata* Ulrich (1888), 1890, p. 652, pl. 70, fig. 12a–d. Mississippian (New Providence); Kings Mountain, Ky.

Streblascopora, n. gen. Like *Streblotrypa*, but with a central bundle of parallel immature tubes as in *Ascopora*. Type species: *Streblotrypa fasciculata* Bassler, 1929, p. 66, pl. 239, figs. 4, 5. Permian of Timor.

Order Cheilostomata Busk, 1852

Family Gigantoporidae Bassler, 1935

Stenopsella, n. name for *Stenopsis* Canu and Bassler, 1927, preoccupied by *Stenopsella* Rafinesque, 1815, etc. Type species: *Porina* (*Stenopsis*) *fenestrata* (Smitt, 1873), p. 47. Recent; Gulf of Mexico.

ZOOLOGY.—*The larva of* Hymenolepis californicus *in the brine shrimp* (Artemia salina). R. T. Young, University of Montana (*emeritus*). *Communicated by* E. W. Price.)

In 1933 Stammer described a remarkable cestode larva, *Cysticercus* (*Cercocystis*) *mirabilis*, in the water flea (*Daphnia magna*), which he postulated to be the larva of a *Hymenolepis* or *Aploparaksis* but was unable to verify his suspicion by feeding experiments on ducks, either domestic or wild. And examination of wild birds (2 *Podiceps cristatus*, 3 *Anas querquedula*, and 2 *Anas platyrhyncha*) from *Daphnia* ponds failed to reveal any cestodes whose hooks were similar to those of this larva. The most striking feature of Stammer's larva is the length of its tail (2.2–5.2 cm) while the body is only 0.091–0.104 mm long. Thus the parasite may be ten times the length of its host. I have found what is the same or a closely related species, in the brine shrimp of Mono Lake and salt pools near Chula Vista, Calif., which I here describe, together with a note on its life history.

Technique.—The larva has been studied mainly in freshly dissected shrimp flattened beneath a cover glass, but specimens fixed in Dubosq-Brazil's modification of Bouin's solution and stained in acetocarmine and Ehrlich's haematoxylin have also been employed.

The larva.—The larva, which corresponds to the "cyste" of Stammer, is an oval or oblong body varying in length from 0.073 to 0.256 mm in fresh specimens, and in diameter from 0.044 to 0.088. Six specimens averaged 0.153 in length and three 0.061 in diameter. They are encased in a heavy membrane or cuticle enclosing many round or oval chalk bodies, and a crown of 10 hooks, one of which is shown in Fig. 1. These hooks also vary in size from 0.008 to 0.017 mm. These differences in size of body and hooks are undoubtedly mainly developmental.

Most of these larvae lie free in the body of the shrimp, but some of them are surrounded by a sack, to which is appended a tail of variable length. There is a small depression (pore?) in the membrane at the head end of the larva. Accurate measurement of the tail is impossible because of its bent and twisted form, being rolled about itself spirally as described by Daday (1900) in other species. I have however made an approximate estimate of its length in one specimen, illustrated in Fig. 2. In this it extended about 7 mm from the larval sack. Making due allowance for the amount of bending and coiling the length of this tail must have been at least 20 mm, which is considerably less than that recorded by Stammer.

My interest in this study was primarily ecological rather than morphological. Nevertheless I have made a sufficient comparison of my larva with that described by Stammer to convince me of the probable identity of the two forms.

Whether the free larva represents an early stage, the sack and tail being developed later, or a later stage, these structures having degenerated and disappeared, is an open question. Stammer apparently inclines to the latter view, for he says (p. 81) that in copepod infesting larvae the tail degenerates, and since there are a number of the latter which "in ihrem Bau dem unserer Form ähneln . . . (I cannot deny) dass diese Schwanzanhänge alle anzeichen einer ausgesprochenen Degeneration zeigen." However, on page 82 he describes one case of a young larva in which "die Cyste mit dem Scolex und den Haken war bereits vollständig ausgebildet,